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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,254	03/24/2004	Ernest Eisenhardt Bergmann	CIRC.014	4224
20987 7590 11/29/2007 VOLENTINE & WHITT PLLC ONE FREEDOM SQUARE 11951 FREEDOM DRIVE SUITE 1260 RESTON, VA 20190			EXAMINER ABDIN, SHAHEDA A	
			ART UNIT 2629	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/808,254	Applicant(s) BERGMANN ET AL.	
	Examiner Shaheda A. Abdin	Art Unit 2629	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Response to Argument

1. The amendment filed on 10/02/2007 has been entered and considered by examiner.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In Claim 1, lines 2-3, the limitations "**a first reference digital test signal**" and "**a second reference digital test signal**" are recited. The original disclosure of the application does not disclose such limitations. The only place in the application, In paragraph [0010], in line 3-4 discloses "Apparatus and method to Test Digital Communication" which does not render the above claim limitations.

In claim 6, lines 2-3 "**second reference digital test signal are modulated at the same wavelength**". The disclosure of the application does not disclose such limitations.

### **Claim Rejections - 35 USC § 102**

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Hernday et al. (US patent No: 5041997).

(1) Regarding claim 1:

Hernday discloses an apparatus (e.g. light wave component analyzer 10, in Fig. 2C) (column 3, lines 43-55) comprising:

a first output port (output port at element 8493C) configured to output a first reference digital test signal (see Fig. 2C) (note that signal at section 8493C is digital signal which is the output from Fig. 2A; In Fig. 2A two kinds of signal states are working by the switch S5 which is analog signals are on the left and digital signals are on the right, the signal from the right are used for Fig. 2C. Moreover, in Fig. 2C on the right side

'DAC' converter is used which indicates that signal flow from the left side is digital signal);

a first input port (i.e. input at MOD AMP) configured to input a second reference digital test signal (i.e. signal from the output port of section 8493c is entered as a second reference test signal at MOD AMP) (see Fig. 2C),

a second output port (i.e. output port from MACH-Zehnder optical modulator) configured to output a first stressed digital test signal (MACH-Zehnder optical modulator is using as an attenuator, therefore, output signal from this section is interpreted as a first stress test signal), wherein the second reference digital test signal is based on the first reference digital test signal and the first stressed digital test signal is based on the second reference test signal (note that the illustration in Fig. 2C, at section 8493C, is configured to output first reference digital test signal which is the input for MOD AMP and output the second reference digital test signal which is the input for MACH-Zehnder optical modulator and output as a first stress test signal).

(2) Regarding claim 2:

Hernday teaches at least one of the first reference digital test signal, the second reference digital test signal, and the first stressed digital test signal is an optical signal (stress test signal output from MACH-Zehnder optical modulator is optical signal which is input to optical isolator).

(3) Regarding claim 3:

Hernday teaches at least one of the first output port, the first input port, and the second output port is a fiber optic port (see Fig. 2C and column 2, lines 15-23).

(4) Regarding claim 4:

Hernday teaches the first reference digital test signal (i.e. signal from output port of section 8493C) is modulated to output the second reference test signal (see Fig. 2C, column 7, line 3-10).

(5) Regarding claim 5:

Hernday teaches the first reference digital test signal and the second reference digital test signal are modulated at different frequency (note that optical beam carries a modulation component at the difference frequency) (column 4, lines 46-50);

the first reference digital test signal and the second reference digital test signal carry the same data (note that there is no change or modulation of signal between section '8493c' and 'Mod AMP', therefore, the first reference digital test signal and the second reference digital test signal could be carrying the same data).

(6) Regarding claim 6:

Hernday teaches the first reference digital test signal and the second reference digital test signal are modulated at the same wavelength; and the first reference digital test signal and the second reference test signal carry substantially the same data (note that second reference digital test signal based on first reference digital test signal which is substantially the same and carry the same data and second reference digital test signal modulated at 1300 nm laser therefore, the first reference

digital test signal and the second reference digital test signal are modulated at the same wavelength which 1300 nm) (column 4, lines 25-35, and fig. 2C).

(7) Regarding claim 7:

Hernday teaches the first reference test signal is generated at the internal transmitter (light wave analyzer has an internal source, column 2, lines 55-69, note that the internal source is a combination of an internal transmitter).

(8) Regarding claim 8:

Hernday further comprising stressing medium (MACH-Zehnder optical modulator, working as an attenuator), wherein the second reference test signal is stressed at the stressing medium to output the first stressed test signal from the stressing medium (the modulated output from the MACH-Zehnder optical modulator is outputting as a first stressed test signal).

(9) Regarding claim 9:

Hernday teaches the stressing medium stresses the second reference digital test signal by at least one of: attenuating the second reference digital test signal, creating dispersion in the second reference digital test signal; and creating interference with the second reference digital test signal (the modulated output from the out put port at element 8493C is outputting as an attenuating test signal) (column 3, lines 46-55, column 4, lines 25-36, and fig. 2C).

(10) Regarding claim 10

Hernday teaches the apparatus monitors at least one of the first reference digital test signal, the second reference digital test signal, and the first stressed digital test signal (attenuation, that means transmission and reflection characteristic of a (DUT) device under test are displayed on a cathode ray tube 20) (column 5, lines 6-15 and fig. 2C).

(11) Regarding claim 11:

Hernday teaches the apparatus comprises a first switch (S8), an internal transmitter (i.e. internal source transmitter) (note that the apparatus in Fig. 2C having an internal optical source in order to transmit the signal the system must need a transmitter, signal would not be transferred with out the transmitter, see column 2, lines 54-65), and a stressing medium (MACH-Zehnder optical modulator) (See Fig. 2C); the internal transmitter is coupled to the first output port (out put port at element 8493C) through the first switch (S8), when the first switch is in a first switching state (i.e. switching state a), the internal transmitter is coupled to the stressing medium (MACH-Zehnder optical modulator) through the first switch (S8) when the first switch is in a second switching state (i.e. switching state b) (column 8, lines 6-16, and fig. 2C) .

(12) Regarding claim 12:

Hernday teaches the first input port (i.e. in put at MOD AMP) is coupled to the stressing medium ((MACH-Zehnder optical modulator) when the first switch is in the first



switching state (note that switch matrix is connected by the instrument controller in response to selection of a measurement by a user to facilitate calibration of, and test measurements of devices under test with, (see the abstract, column 8, lines 33-37).

(13) Regarding claim 13:

Hernday teaches a second input port (input at port at 12<sub>1</sub>) configured to input a second stressed digital test signal (note that the input at 12<sub>1</sub> is based on the stressed signal from MACH-Zehnder optical modulator, which is interpreted as second stressed test signal, see Fig. 2C),

a third output port (note that the output port from MACH-Zehnder optical modulator which is operating by the input EXT LASER from 12<sub>3</sub>) configured to output a third stressed digital test signal) (see Fig. 2C);

a third input port (the port where the stressed signal input at 12<sub>1</sub>, (based on EXT LASER from input 12<sub>3</sub>)) configured to input (input at 12<sub>1</sub>) a fourth stressed test signal (also see column 7, lines 1-16);

(14) Regarding claim 14:

Hernday teaches the third stressed test signal and the fourth stressed test signal are the same (in fig. 2C we can see that third stress signal become fourth stressed test signal which is same as third stressed test signal).

(15) Regarding claim 15:

Hernday teaches the apparatus monitors at Least one of the first reference digital test signal, the second reference digital test signal, the first stressed digital test signal, the second stressed digital test signal, the third stressed digital test signal, and the fourth stressed digital test signal (i.e. stressed test signal which is attenuation, that means transmission and reflection characteristic of a DUT, device under test are displayed on a cathode ray tube 20) (column 5, lines 6-15 and fig. 2C).

(16) Regarding claim 16:

Hernday teaches the second output port (port from MACH-Zehnder optical modulator) is coupled to the second input port (input at port at 12<sub>1</sub>) (column 3, lines 46-55, column 4, lines 25-36, and fig. 2C).

(16) Regarding claim 16:

Hernday teaches the second output port (port from MACH-Zehnder optical modulator) is externally coupled to the second input port (12<sub>1</sub>) by a communication link under test (i.e. DUT) (column 4, lines 10-14).

(17) Regarding claim 17:

Hernday teaches the second output port (port from MACH-Zehnder optical modulator) is externally coupled to the second input port (12<sub>1</sub>) by a communication link under test (i.e. DUT) (note that DUT comprises connection to the second input port (12<sub>1</sub>) which is externally coupled, also see column 4, lines 10-14).

(18) Regarding claim 18:

Hernday teaches the communication link under test (i.e. DUT) comprises at least one of a : a communication medium (i.e. light wave medium); and an communication device (i.e. fiber optics repeater) (column 454, lines 13-30).

(19) Regarding claim 19:

Hernday teaches the communication medium is chosen from the group consisting essentially of: optical media (e.g. optical fiber cable); wire line media' and wireless media (anoptical media connected to the lightwave test port(s) (12<sub>1</sub>) (column 4, lines 53-66, lines 9-15 and Fig 2C),

(20) Regarding claim 20:

Hernday teaches the communication device is at least one of: an amplifier, a repeater, a coupler, and a polarizer (column 453, lines 30-51).

(21) Regarding claims 21:

Hernday teaches the third output port (note that the out put port from MACH-Zehnder optical modulator which is operating by the input EXT LASER from 12<sub>3</sub> is interpreted as third output port) is externally coupled to the third input port (the port where the stressed signal input 12<sub>1</sub>, (based on EXT LASER from input 12<sub>3</sub>)) (see fig 2C, third output port is coupled to third input port), the third output port is coupled to an external device under test (column 4, lines 63-66, lines 9-15, column 453, lines 1-15,30-50, and fig 2C),

(22) Regarding claim 22:

Hernday teaches in the third output port is coupled to an external device under test (i.e. DUT) (see fig 2C, third output port (see the description in claim 21) is coupled to third input port), the third output port is coupled to an external device under test (column 4, lines 63-66, lines 9-15, column 453, lines 1-15,30-50, and fig 2C),

(23) Regarding claim 23:

Hernday teaches the external device under test (i.e. DUT) is an external receiver (note that DUT is connected to 12<sub>1</sub>, which is perform is an external receiver; see column 5, lines 56-63 and column 454, lines 50-58).

(24) Regarding claim 24:

Hernday teaches the external device under test inputs the third stressed digital test signal and outputs the fourth stressed digital test signal (note that DUT is externally connected to 12<sub>1</sub>, and the third input port (the port where the stressed signal input at 12<sub>1</sub>, (based on EXT LASER from input 12<sub>3</sub>)) configured to input (input at 12<sub>1</sub>) a fourth stressed test signal, therefore, DUT will be able to output fourth stressed signal).

(25) Regarding claim 25:

Hernday teaches the apparatus includes an internal receiver (column 1, lines 24-36).

(26) Regarding claim 26:

Wherein the apparatus comprises an internal receiver (column 1, lines 24-36).

(27) Regarding claim 27:

Hernday teaches the internal receiver inputs the fourth stressed test signal (according to fig. 2C, signal passing through optical input 12<sub>2</sub> to internal receiver 16 which is giving a stress signal ) (column 1, lines 24-36, column 2, lines 54-60)

(28) Regarding claim 28:

Note that claim 28 is same as claim 1. Claim 1 is an apparatus claim and claim 28 is a method claim.

### **Response to Arguments**

6. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

In view of amendment, the signal outputted from Fig. 2A and inputted to Fig. 2C is interpreted as a first reference digital test signal and the second reference digital test signal.

### **Conclusion**

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Inquiry***

8. Any inquiry concerning this communication should be directed to the examiner at (571) 270-1673 Monday- Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen, can be reached at (571) 272-7772.

Information regarding the status on an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9799 (IN USA OR CANADA) or 571-272-1000.

**Any response to this action should be mailed to:**

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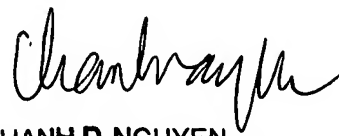
**Or fax to:**

**(703)872-9314 (for Technology Center 2600 only)**

Shaheda Abdin

11/23/2007

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